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MONTANA HEALTH DATA MANAGEMENT SYSTEM

Prepared for:

State of Montana
Division of Health Planning
and Resource Development

December 19, 1975

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I. INTRODUCTION

This report is an initial effort in the development and maintenance of an on-going health data management system for the State of Montana. The development of this data system is not an attempt to set up in a single location a library where all available health data are stored; nor is it an attempt to gather new health data. Rather, it is an attempt to describe some of the health data already being gathered by various agencies in Montana, to indicate the interrelationships, and to describe potential uses of that data for the system.

This effort is described as a health data management system because it centers on the integration and analysis of existing data bases. The principal recommendation to be generated by this effort is that the system management (i.e., maintenance, expansion and technical assistance) be done by the Department of Health and Environmental Sciences, Bureau of Records and Statistics on an on-going basis. Specifically, it is suggested that the Bureau assumes the role of clearinghouse and facilitator in assisting interested Federal, state and local agencies, as well as private organizations in locating and analyzing health related information contained in the system.

The need for such a system is clear. Health related data are collected by at least ten different state offices and an equal number of private organizations. This study is the first effort to begin assembling these data to discover their potential uses.

Such an effort is a prerequisite to meeting the needs of both state and Federal agencies. Historical data are required for specific situations and general planning applications by the State. The National Health Planning Act (P.L. 93-641) is quite specific about the types of data that will be required, who shall provide it, and some of the ways in which the data will be used.

Each Health Systems Agency is required to have a staff member with expertise in the gathering and analysis of data. Each is required to assemble and analyze data concerning:

A. The status (and its determinants) of the health of the residents in its health service area;

B. The status of the health care delivery system in the area and the use of that system by the residents of the area;

C. The effect the area's health care delivery system has on the health of the residents of the area;

D. The number, type and location of the area's health resources, including health services, manpower and facilities;

E. The patterns of utilization of the area's health resources; and

F. The environmental and occupational exposure factors affecting immediate and long-term health conditions.

The health data system described in this report is an attempt to provide health planners with information that will be useful in fulfilling their planning, review-and-comment, and public

information functions, and to provide the first steps in assembling some of the data required in accordance with P.L. 93-641.

This report briefly addresses the nature and applications of the data incorporated into the system to date. Much of the real potential of this system, however, is in the future. As the functions of health planning, regulation and resource development become more sophisticated, an increasing number of questions will arise that only data can answer. As the focus of activity in the state begins to encompass state health services to a greater degree than in the past, it will become necessary to incorporate data on these services into a system which now largely addresses itself to acute health services provided mainly by the public sector.

It must be remembered that data do not make decisions, rather they assist decision-makers in that process. Hence, the system discussed in this report is to be used by health planners and decision-makers. The remainder of this report will summarize the various data files maintained by the various health related state agencies. The summary will include a description of current and potential uses of those files in a health planning and review context, concluding with specific examples of facility and manpower data configurations and suggested uses.

II. HEALTH DATA SYSTEM COMPONENTS

Within a data management system of the scope envisioned, detailed consideration must be given to each of the following components:

A. Demographic and Socio-Economic Data;

B. Health Manpower;

C. Health Facilities;

D. Utilization;

E. Vital Statistics; and

F. Financial and Cost Data.

These components are not independent, of course. The need for future health facilities depends largely upon demographic factors: the alleviation of physician shortages may rest partially upon the adequancy of facilities, and so forth. This section of the document discussed each of the components as separate factors in completing an overall view of a health data management system.

A. Demographic and Socio-Economic Data

The sources and example applications of demographic and socio-economic data are presented below.

1. Sources

Demographic and socio-economic data in the form of U.S. census information are available from the Division of Research and Information Systems of the Montana Department of Community Affairs.

These data contain information on the number, age, sex and income of Montana's population down to the level of census tracts.

Each year population estimtes by sex and age are updated for each county. These estimates are based on past trends modified by data on births, deaths, elementary school enrollment and automobile registration.

Additional U.S. census projections are published by the U.S. Bureau of the Census under the title, "Current Population Reports." These reports provide estimates of state and county population levels, using different assumptions regarding the behavior pattern of the major variables affecting population levels. While they are not refined in their analyses of the populations, these projections may be useful once the principal determinants of population change in an area are known.

In addition to population data and projections, the Division of Research and Information has detailed information on socio-economic and natural resources. The Division conducts economic studies and provides computer-based services.

2. Applications

From the standpoint of health planning there are four essential variables useful in examining populations:

- age
- sex
- income
- residence

The first two indicators describe the demographic characteristics of the population, while the last two describe social characteristics. Both the nature of the people to be serviced by the health care system and the manner in which they relate to one another have an important bearing on the types of service they will require. Of these, age and sex are certainly the most important. Regarding age, people use considerable amounts of health services during the first year of life. They then decrease their use to their teens, and gradually increase the amount of services they use each year for the rest of their lives. This produces what is known as a "J" curve when age is plotted against the amount of service used:

While no units are applied here, the basic relationship of volume-of-service to age would hold measured in terms of cost or utilization.

Sex becomes important as a discriminator because women tend to use services more than men. This is especially true in the childbearing ages of 15-44, but it also holds true for other ages. Thus, if the particular group under consideration has considerably different incidence of women than the general population, one can expect the population's use of health services to be affected accordingly.

Thus far, use of health services has only been mentioned in terms of volume. However, there are also differences in the mix of services based upon age and sex. Regarding age first: the incidence of acute health conditions normally decreases with time, while the incidence of chronic conditions increases. In terms of sex, there are obvious differences related to childbirth services and organ structure between men and women.

Income is an important variable in at least two ways: By itself, income usually will correlate directly with the volume of service used; however, there are exceptions to this, particularly among those low income groups using Medicare and/or Medicaid insurance coverage.

Here the price of care is effectively dropped to zero and use correspondingly rises. By itself, the impact of income on use of services is further complicated by the fact that among higher income groups there is more buying of discretionary health services which would normally not be considered necessary for health maintenance.

The second manner in which income is important is as an indicator of insurance. The presence of health insurance definitely appears to increase use of services with the amount of increase dependent both upon the income level and amount of coverage.

Residence patterns are primarily important because of their relationship to access. Time and distance definitely serve as barriers to care, such that rural populations show considerably less use of services than urban populations when all else is held equal.

B. Health Manpower

Health manpower describes the number and characteristics of the major health occupations. At this time the data system incorporates information on physicians, nurses and dentists. This section of the report describes the information available on each of these professions and also provides some preliminary applications.

1. Physicians

Information on physicians includes:

- Name
- Current Address
- License Number
- Date of Birth
- State of Birth
- Medical School
- Year Graduated
- Specialty
- Date of First Registration
- Date of Most Recent Registration
- Previous Addresses

This information has been put onto computer tape and is available from the Bureau of Records and Statistics. Information on new physicians, license and relicensures should be added to the tape every spring.

At this time the data base describes the characteristics of Montana's physicians. It does not indicate where individuals born in Montana but practicing elsewhere are located. The American Medical Association is willing to make such information available through their rather extensive files. In return the AMA would like to have its data on Montana's physicians updated on an annual basis. An exchange of data between the two groups should thus be accomplished at minor expense.

2. Nurses

Information on RN's and LPN's licensed in Montana is kept by the Board of Nursing in the Department of Professional and Occupational Licensing on computer tape and includes:

- Name
- Sex
- Marital Status
- Birth Year
- Social Security Number
- Average Number Hours Worked per Week
- Average Number Weeks Worked per Year
- County of Employment
- County of Residence
- Field of Employment
- Type of Position
- Major Clinical Teaching or Practice Area
- Basic Nursing Education
- Highest Degree Held

3. Dentists and Dental Hygienists

The Department will be receiving information on computer tape from the American Association of Dental Examiners on dentists and dental hygienists in Montana which lists:

- Name
- Age
- Dental School
- Year of Graduation
- Current Address

C. Health Facilities

1. Sources

Health facilities data were collected from records in the Division of Hospital and Medical Facilities (DHMF) of the Department of Health and Environmental Sciences. Data for hospitals and nursing homes in the state for

the years 1972, 1973 and 1974 has been put onto computer tape. The Bureau of Records and Statistics can run analyses of the data. This department surveys both hospitals and nursing homes on an annual basis. New formats for these questionnaires to collect information needed and array it in a manner that is amenable to key punching should be developed.

A note of caution must be extended regarding this data. It is apparent from examining the information on individual facilities that there are omissions and/or mistakes. Errors of omission create gaps in the record; both types of errors reduce reliability of findings. However, examining data related to several specific instances shows that errors are consistent throughout. Thus, relative changes in circumstances which appear from the data are accurate.

As the data system grows and its use becomes more widespread, there should be both additional information regarding specific data to be collected and greater attention to detail on the part of those persons submitting data.

Both the format and nature of data available through the DHMF survey are described by Appendix A.

A second source of information on hospitals in particular is the Montana Hospital Rate Review System. This System includes hospitals representing more than 80% of the beds in the State and was created to serve as a voluntary mechanism for price control. To achieve this end, the System surveys its participating facilities on an annual basis to obtain current information regarding their financial experience. Thus, the system can potentially provide information for detailed analysis of specific hospital services.

Data from this source are not presently included in the data package since representatives of the System prefer to maintain their data and respond to specific requests.

2. Applications

Facility data are useful for their capacity to describe both supply of and demand for hospital and nursing home services. Inventory information regarding beds, personnel and services reflect supply; utilization information from the facilities reflect demand.

Several tables are included in Appendix D as examples of useful ways to present and examine this information. These particular tables are descriptive of hospitals in Eastern Montana. However, they can be created as well for the remainder of the state and nursing homes, though the complexity of services in nursing homes is less.

There are many other ways to present the information, depending upon the question or questions that the planner/reviewer seeks to have answered. For example, the range of services might be compared to the bed size of facilities to determine the relationship of these indicators to one another in Montana.

D. Utliziation Data

1. Sources

Utilization statistics describe the operation of the health care system. There is no universal source of comprehensive utilization information; thus inferences about complete utilization patterns must be made from information regarding use of certain services and information on use by special populations. The capacity to generalize from either is limited.

At present there are three principal sources of utilization information: Facility reports, third-party payors and specific surveys. Since the facility information has already been discussed in another section, no further attention will be given to that data in this section.

Third-party information is available in most complete form on the Medicaid population. Since the benefits for which this population is eligible are quite comprehensive in nature, the utilization picture presented by this data is quite broad. Its principa; weakness is the special characteristics of the user population which limit the possible generalizations about the total population. However, data do exist on this population and, if precautions are taken when using the data, useful observations can be made.

Data on the Medicaid population are compiled from claim forms by the Dikewood Corporation for the Department of Social and Rehabilitation Services (SRS). Data are available to a limited extent from computerized information files and through published summaries.

Information is also collected and stored on the Medicare population. As with the Medicaid population, these data have the same limitation of pertaining to a special population. A second and more serious problem with the Medicare data is that there is almost a two-year lapse from time of generation of the data until they are available. Because of these limitations, no Medicare data are included in the system at this time.

Surveys may be made for specific and selected purposes to fill gaps in utilization data. One such survey, a Patient Origin Sutdy, has been completed for Montana's hospitals by the State Health Planning and Resource Development Division. Other surveys might be used to establish patterns of health services use for the general population in the state or to fill specific gaps in the existing state systems.

2. Applications

In applying utilization information, once must keep in mind that it reflects what occurred in the past, how much a particular resource is being used, or how frequently a particular event occurs. It provides a rough guide to determine what will happen if either the mix of people or facilities changes.

Population and utilization information are used in determining the need for hospital beds. While many ways exist to determine need, an example is presented in this report: If the rate of hospitalization is known and the number of people in a given population is known, then the number of admissions can be calculated. If, in addition, the stay per admission is known, then the number of days of hospital care that will be required by the population can be calculated.

Once this quantity is known, the number of hospital beds required can be determined. This example, while a bit oversimplified, helps to demonstrate how utilization information is employed.

Utilization is not constant over time for a variety of reasons that may stem from the characterstics of the user population or the services available to that population. Utilization rates collected over a period of time indicate the direction and rate of change of those rates. This, in turn, permits the planner to establish some basis upon which to determine what will happen in the future.

Simple historical trends do not totally work in this regard because there are almost always extraordinary events and new focuses impacting upon the rates. Furthermore, there are many factors impacting upon utilization, and few are continuous or constant. Therefore, the user must be careful of how much reliance is placed upon the "answers" developed from data.

The most common applications of utilization information are used in determining needs of populations for facilities, services, or manpower. As in the example above, once a utilization rate and size of the population are known, the need can be calculated.

When this is done, almost invariably the question being asked regards the need for new services or the impact of a decrease in services. In either event, once total need is known, the new need can be calculated by addition or subtraction, depending upon the problem.

There will be times when utilization rates are not available for the data base, but a need must still be determined. This frequently occurs in the case of new services. In such instances, utilization rates developed from other sources may be employed. However, care must be taken to determine differences in delivery system and population characteristics from which the proxy utilization rate was taken in order to maximize its relevance in the problem to which it is being applied. A good example of this situation is the determination of need for CAT Scanners. Since there are no CAT Scanners in the state, the rates from other locations need to be employed. However, if the population that generated the use is considerably different in its make-up, the use required by that population is also likely to be different. Similarly, if characteristics of health resources or the quantity of those resources in proportion to the population are different from the Montana situation, then the level of use is likely to be different.

E. Vital Statistics

1. Sources

Vital statistics describe morbidity and mortality rates for certain specific conditions. Morbidity information primarily focuses upon the incidence of communicable diseases. Mortality information lists the most common principal causes of death and their frequency. This data enjoys the distinction of being the most readily available indication of outcomes of the health care system. While there are limitations to its use, it can be very informative concerning a population's health status and the capacity of that population's delivery system to affect that status.

Vital statistics are published annually by the Bureau of Records and Statistics of the Department of Health. These data are of three different types: Births, deaths and incidence of infectious diseases. While the data are published in specific arrays and tables, the Bureau can frequently provide more refined information than that published.

2. Applications

The use of vital statistics, while potentially great by planners, frequently has been limited. In this section three applications are suggested as a starting point. All of the examples highlight the usefulness of the data to determine goals and objectives.

As will be shown, the usefulness of the statistics continues once the objectives are established.

The first example demonstrates the usefulness of communicable disease information in determination and implementation of health education policies. The data can initially be used to determine what diseases are most prevalent. The information can then serve to indicate what options might be pursued during intervention to reduce the disease prevalence. Once specific options are selected and implemented, the data will indicate effectiveness of interventions selected.

To make this example more concrete, consider venereal disease. The rapid growth in incidence of gonorrhea indicates that its control is a worthwhile objective. Information regarding the kinds of people reporting the disease suggests where attention should be focused. Subsequent monitoring of the situation will indicate whether the spread of gonorrhea is actually being controlled.

When combined, as are data by the Bureau of Records and Statistics to form an index, data are useful in determining relative health status of state residents.

From this assessment, policies may be developed regarding the most important locations to encourage development of new resources. As in the first example, the data should subsequently suggest whether the policies were effective.

Insofar as mortality data reflect the conditions from which people most frequently die, they form a useful base for assessing conditions requiring attention by the health industry. However, magnitude is only one of several considerations, and others such as capacity and cost of intervention must also be considered in determining whether a particularly prevalent death-resulting condition should be aggressively addressed. Assuming a condition can be located, the data can subsequently be used for evaluation of the effectiveness of the intervention.

E. Financial and Cost Data

1. Sources

Financial data as used here address the value of resources employed and sources of funds for the delivery of health care. Costs, by contrast, pertain to expenditure patterns that develop in the delivery of health services. As with utilization data, financial and cost data are relatively scarce. In addition, they also pertain either to selected services or certain special populations.

The Medicaid program maintains extensive files on the cost of services delivered to Medicaid recipients. Information on the cost of services provided by type of service and welfare category is available in published form. More detailed information is available on computer tapes maintained by the Dikewood Corporation as part of their service to the State.

The facilities survey conducted by the Division of Hospital and Medical Facilities collects per diem costs for all facilities it surveys. This information is now available on computer tape as part of the information system. In addition, the Montana Hospital Rate Review System collects and maintains relatively complete files on revenues and expenses of its participating hospitals. These data, however, are available only upon special request.

2. Applications

The most common application of financial information is in considering alternative ways to deliver services. For example, any population will require a certain amount of hospitalization. By knowing the cost of building and staffing a facility, the amount of hospitalization required by the population, and the costs of services provided elsewhere, a basis can be established for deciding whether to buy services or to build a facility. Similarly, in considering the

addition of a new service to an existing facility, financial information indicates the economic implications.

When combined with information about service capacity and utilization rates, financial information is useful in explaining variations of costs for services within different communities, and sometimes within the same community. Facilities have not traditionally been constructed on economic considerations, and the results of this fact are demonstrated by an examination of price differences for similar services in different locations.

Even with the above examples, the usefulness of financial analysis is limited due to difficulty in determining benefits to be derived from the assurance that a service is closely available or the cost of longer disability. These considerations serve to underscore why economic analysis has tended to be a secondary concern in health planning. However, these limitations aside, financial value remains as a common denominator for measuring the benefits and costs of alternative courses of action.

III. SYSTEM MANAGEMENT

In order for the data system described thus far to continue functioning and to become more sophisticated, a method of management of the system is necessary. Specific responsibility for maintenance of the system must be assigned and a mechanism for involving producers and users of data must be created. Finally, a plan of action and allocation of resources for the operation and updating of the system is needed. In this section some preliminary recommendations are made as to how these matters may be resolved.

The logical group to assume responsibility for the system appears to be the Bureau of Records and Statistics, headed by Mr. John Wilson. This group has experience in working with data as the producer of Montana's vital statistics and a working familiarity with the health field by virtue of their current responsibilities.

The responsibilities of the Bureau in coordinating the data system would be four-fold: (1) The data files must be physically maintained, including both duplication and storage of information from primary sources, and subsequent purging of files containing information no longer valid. (2) An effort must be expended to monitor and, where feasible, integrate existing data collection efforts. This may potentially occur, for example, among state agencies that are interested separately in facilities and manpower. (3) The Bureau would, in all probablity, need to charge a fee to users, since the collection and analysis of data

requires people, time, space and other resources. The nature of the fees to be charged will depend upon the specific data to be presented, the nature of their presentation, the extent and complexity of an individual request, as well as the number of requests for selected and special reports received by the Bureau. (4) Finally, the Bureau must assume responsibility for updating the data in the system on a regular basis. This would entail development of specific relationships with other groups such that as their information is updated, the management system is also brought current.

The data system will be most successful if it operates on a cooperative basis incorporating the interests of those persons generating data as well as those who are using it. To achieve this end, it is recommended that an advisory committee consisting of representatives from at least the following groups be created:

- State Health Planning and Resource Development Division;
- Department of Professional and Occupational Licensing;
- Montana Health Systems Agency;
- Bureau of Records and Statistics;
- Department of Community Affairs;
- Environmental Sciences Division;
- Health Services Division;
- Department of Institutions;

- Department of Social and Rehabilitation Services;
- Legislative Fiscal Analyst;
- Budget Section of the Governor's Office;
- Montana Foundation for Medical Care;
- Montana Rate Review System;
- University of Montana, Bureau of Business and Economic Research;
- Montana State Commission on Local Government; and
- Dikewood Corporation.

This committee would meet on a regular basis to discuss problems of data production as well as opportunities for additional pooling of data collection efforts, and would potentially influence the nature of reports to be produced on a regular basis.

Maintenance of this data system is estimated at $25,000 to $30,000 annually. These funds would be applied to a minimum of two staff persons responsible for maintaining data files and making improvements in the system. Funds would also be used to store, manipulate, and retrieve certain data. As described above, it is not expected that this amount will be sufficent to cover all costs of the system; rather, it will be necessary to charge users of the system.

IV. TECHNICAL DESCRIPTION

This segment of the report describes the computer files and programs which have been designed and tested by John Short & Associates, Inc. as a fundamental attempt to analyze health systems data by computer processing. The files and programs are in no way intended to be a complete and comprehensive package; instead, they are intended to demonstrate the kinds of information which can be stored on computer files and which can be derived from those files.

As such, the output from the programs offered here requires consideration with regards to accuracy. Data collection was not a controlled process and errors in the data are very probable. The problem is complicated by sub-standard and indirect information: for example, the great disagreement on physicans' specialty "codes" and the use of the "fee paid" value as an identifier of a physician's inactive versus active status.

The demand for accuracy should result in improved data collection methodologies. We recommend a total redesign of facility and manpower forms to allow direct computer input without intermediate coding. By eliminating the need for complicated calculations (which a computer can and should do) on the part of personnel in hospitals and long-term care facilities, the institutions will be encouraged to deliver reports and to respond quickly.

Although it is technically feasible, no attempt has yet been made to develop the kinds of computer programs which automatically determine a management decision. All data output from the existing programs must undergo interpretation by the decision-maker. This process insures human control over complex problems in which the "art" of health systems management is involved.

A. Data File

John Short & Associates, Inc. has compiled ten computer files: three for data collected from hospitals, three for data collected from long-term care facilities, two for data collected from physicians, and two for general processing. The code names and description are given below; format descriptions and detailed content are in the Appendices.

Code Name	Description
H72	Hospital Data - 1972
H73	Hospital Data - 1973
H74	Hospital Data - 1974
L72	Long-Term Care Facility Data - 1972
L73	Long-Term Care Facility Data - 1973
L74	Long-Term Care Facility Data - 1974
MD-1	Physician Data - 1974 representing all information on licensure record forms except migration history
MD-2	Physician Data - 1974 migration history

Code Name	Description
TOWNS	1975 zip code, town name, and county index from U.S. Postal Service for State of Montana
COUNTIES	Table of Montana counties and Governor's Administrative Districts

B. Programs for Facilities Data

Two general utility programs have been developed for profiles of hospital data and are listed below:

Code Name	File Input	Card Input
HPROF-1	COUNTIES and one of H72, H73, or H74	Header and county code numbers (i.e., index for which profiles will be created
HPROF-2	One of H72, H73, or 1974	Header and deck of hospital identification code for which profiles will be created

Three reports are generated by HPROF-1, examples of which are shown in Appendix E. It is from these reports that the example tables shown in Appendix D are transcribed.

Three reports are also generated by HPROF-2, examples of which are shown in Appendix E.

As for hospitals, long-term care facilities are profiled by two programs described as follows:

Code Name	File Input	Card Input
LPROF-1	COUNTIES and one of L72, L73 or L74	Header and county code numbers (i.e., index for which profiles will be created)
LPROF-2	One of L72, L73, or L74	Header and deck of facility identification code for which profiles will be created

Appendices G and H contain sample output from the programs LPROF-1 and LPROF-2, respectively.

C. Programs for Manpower Analysis

There are eleven programs for reduction of the data contained in the files MD-1 and MD-2 (physician data); they are described below:

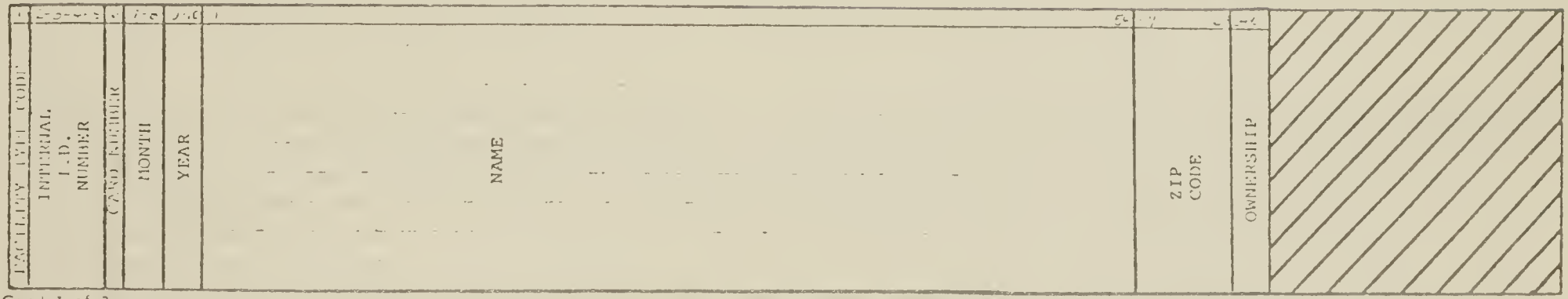
Code Name	Input Files/Decks	Description
MD-1-1	MD-1; no deck	Tests structure of MD-1
MD-1-2	MD-1 and MD-2; no deck	Tests structure of MD-2 with MD-1
MD-2-1	MD-1; no deck	General biographic data
MD-3-1	MD-1; no deck	Distribution across specialty codes
MD-3-2	MD-1; no check	Schools attended
MD-4-1	MD-2; no deck	Allocation of physicians by county
MD-4-2	MD-2; no deck	Migratory habits
MD-4-3	MD-1; no deck	Birthplace by state

Code Name	Input Files/Decks	Description
MD-4-4	MD-1; TOWNS, COUNTIES; specialty code and county indices	Distribution of specialties in the towns of specified counties
MD-4-5	MD-1; TOWNS, COUNTIES; no deck	Allocation of physicians by county according to specialty
MD-4-6	MD-1; TOWNS, COUNTIES; no deck	Allocation of physicians by county according to age

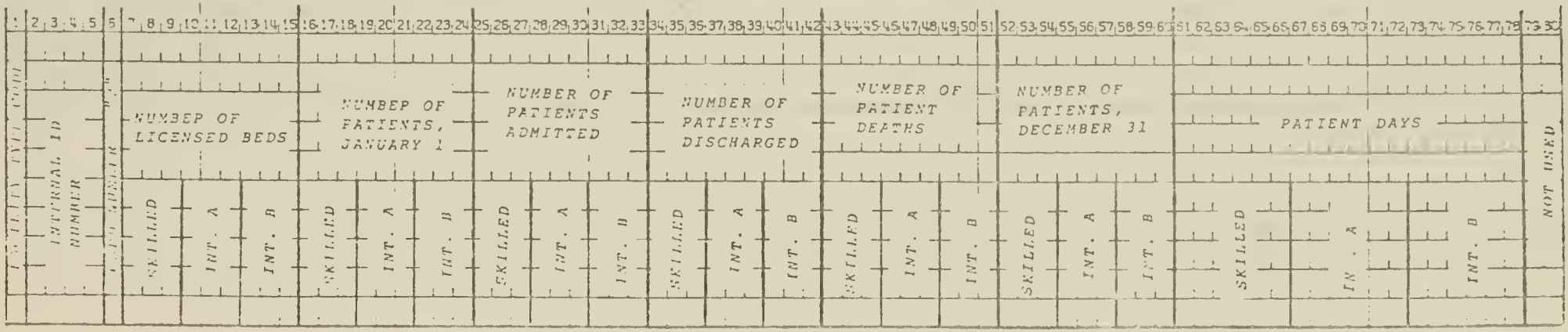
APPENDIX A

CODING FORMAT

- FACILITIES -

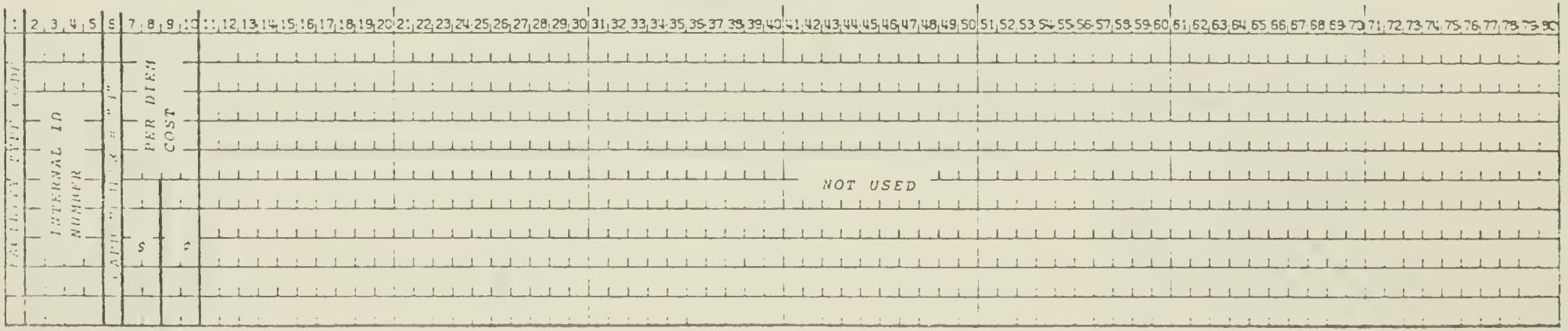


Card 1 of 3



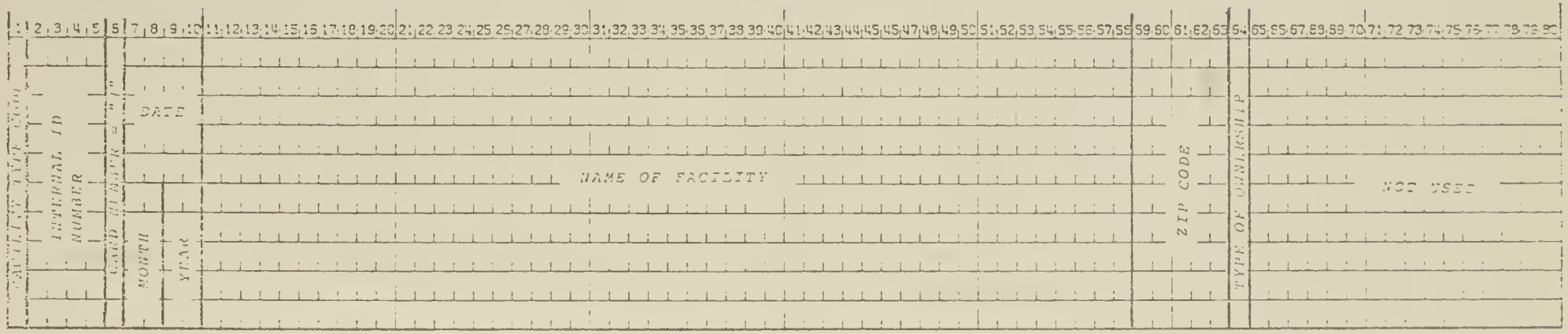
Card 2 of 3

LONG-TERM CARE FACILITIES
PUNCHED CARD DATA FORMAT: 3 CARDS

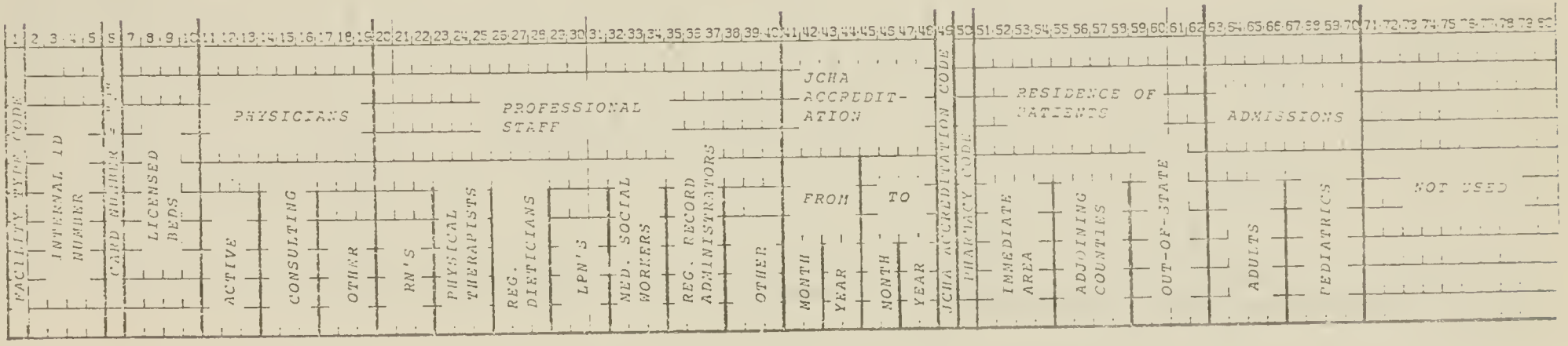


Card 3 of 3

LONG-TERM CARE FACILITIES
PUNCHED CARD DATA FORMAT: 3 CARDS

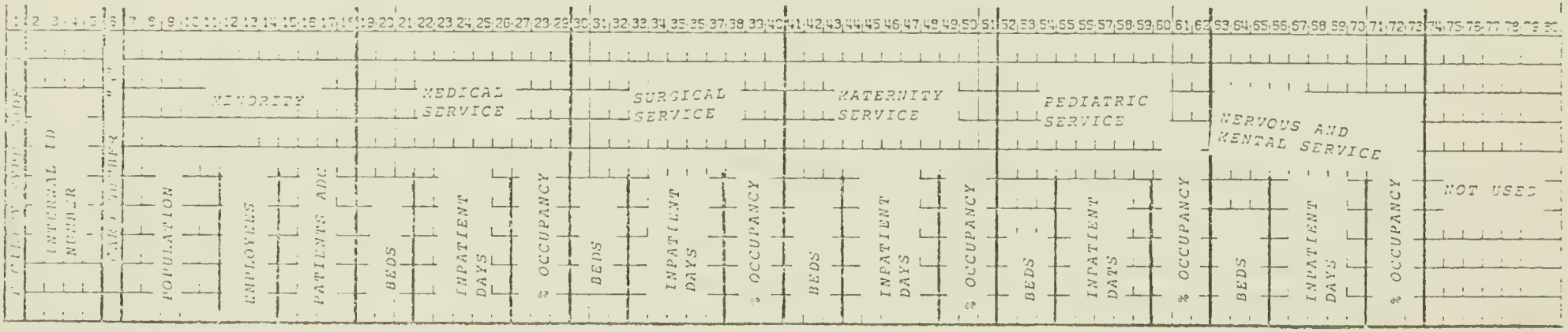


Card 1 of 5

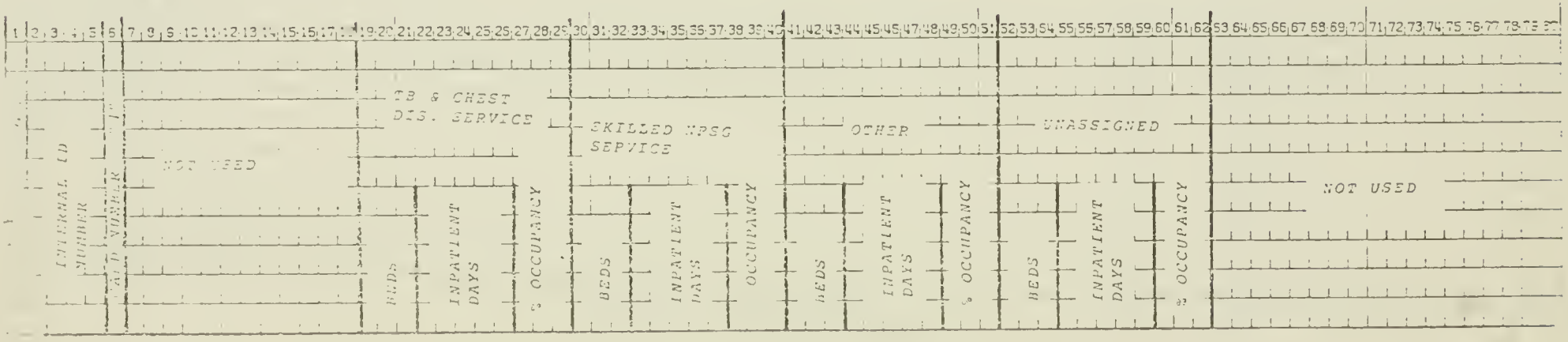


Card 2 of 5

HOSPITALS AND RELATED FACILITIES
PUNCHED CARD DATA FORMAT: 5 CARDS

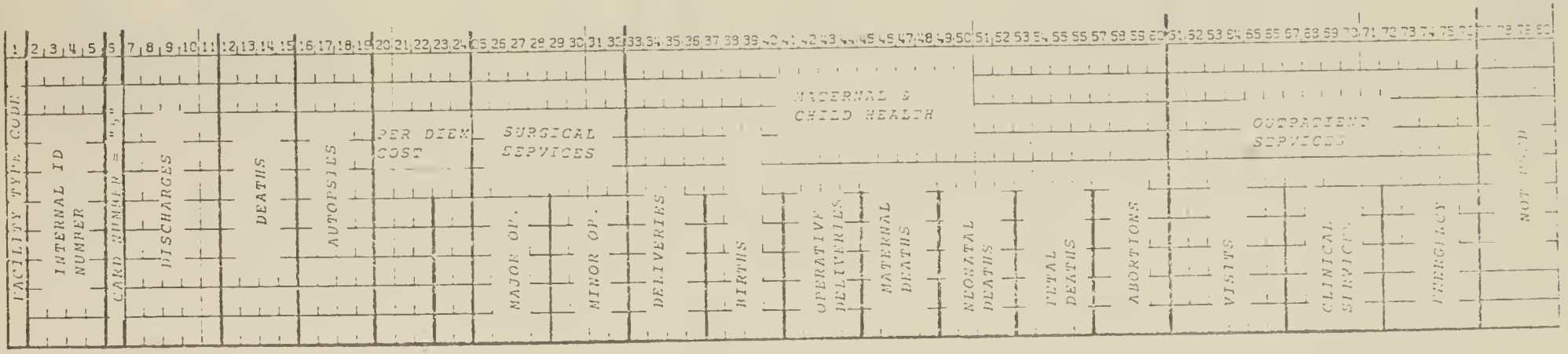


Card 3 of 5



rd 4 of 5

HOSPITALS AND RELATED FACILITIES
PUNCHED CARD DATA FORMAT: 5 CARDS



Card 5 of 5

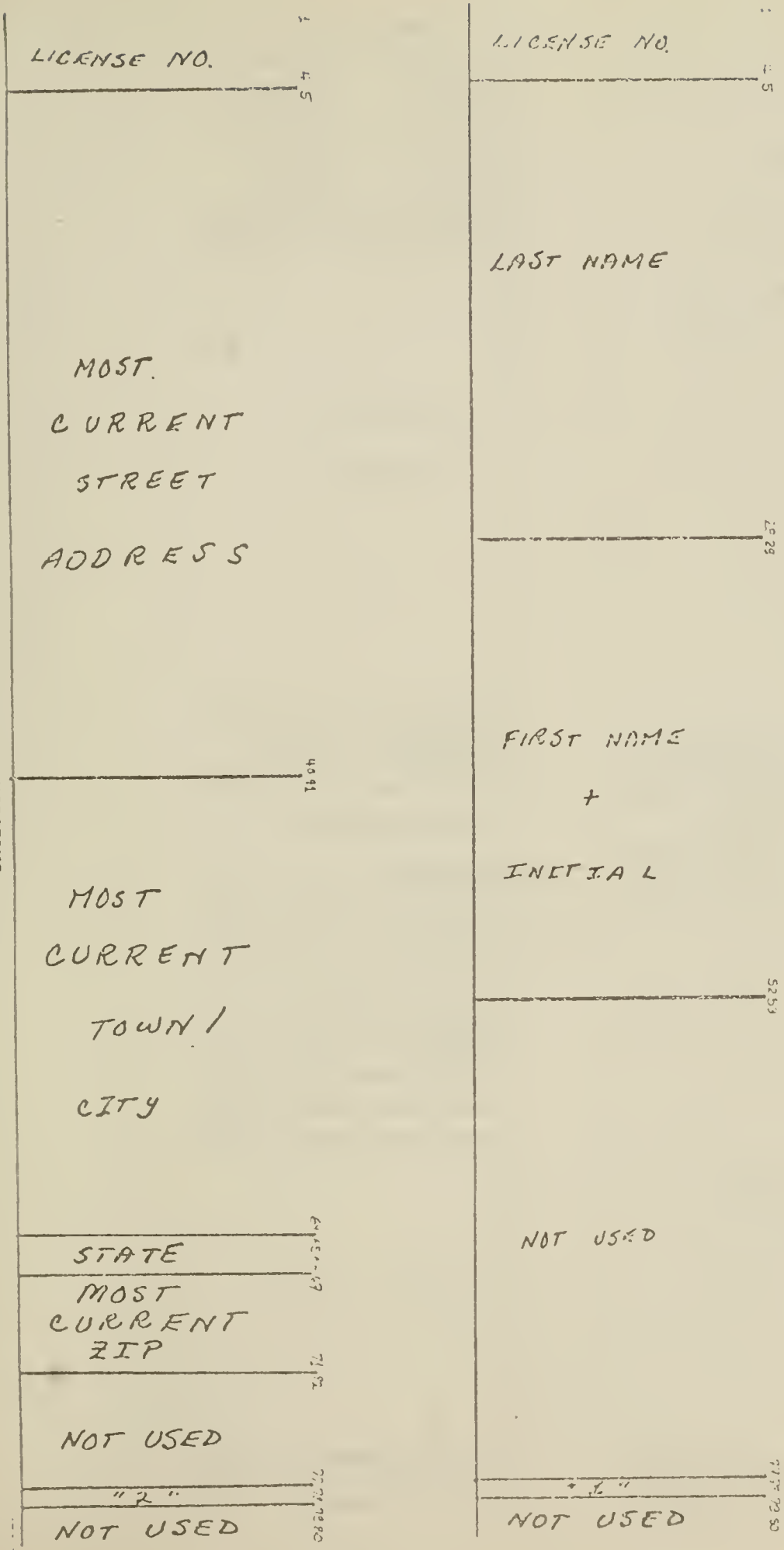
HOSPITALS AND RELATED FACILITIES
PUNCHED CARD DATA FORMAT: 5 CARDS

APPENDIX B

CODING FORMAT

- PHYSICIANS -

PHYSICIANS
PUNCHED CARD DATA FORMAT
(FOUR OR MORE CARDS)



LICENSE NO.

MONTH / YEAR — BIRTH DATE

MONTH / YEAR — DATE LICENSED

BIRTHPLACE (STATE)

ADDRESS HISTORY:

CITY / TOWN

MEDICAL SCHOOL

MONTH / YEAR — DATE GRADUATED

A-H: STATE

A-H: ZIP (IF AVAILABLE)

SPECIALTY

MONTH / YEAR — DATE FIRST REG.

FEE (DOLLARS)

MONTH / YEAR — DATE LATEST REG.

FEE (DOLLARS)

NOT USED

NOT USED

"4"

SEQUENCE NO.

"3"

NOT USED

APPENDIX C

CODING FORMAT

- UTILITY FILES -

COUNTIES

PUNCHED CARD DATA FORMAT: 1 CARD

COLS. 1-2	3-5	6-25
COUNTY NO.	ADMINISTRATIVE DISTRICT NO.	NOT USED

APPENDIX D

EXAMPLES OF FACILITY DESCRIPTIONS FROM THE DATA SYSTEM

TRENDS IN NUMBER OF HOSPITAL BEDS BY SERVICE AREA
EASTERN MONTANA
1965 & 1969 THROUGH 1974

SERVICE AREA	1965		1969		1970		1971		1972		1973		1974		Percent Increase/Decr	
	No.	% of Region	No.	% of Region	No.	% of Region	No.	% of Region	No.	% of Region	No.	% of Region	No.	% of Region	1974 over 1965	1974 over 1970
Custer/Prairie Co.'s	147	24.	148	25.	146	25.	143	25.	148	25.	134	24.	128	23.	-13.	-12.
Daniels County	26	4.	20	3.	20	3.	20	3.	20	3.	20	4.	20	4.	-23.	0.
Dawson/Wibaux Co.'s	46	8.	46	8.	46	8.	46	8.	46	8.	46	8.	46	8.	0.	0.
Fallon/Carter Co.'s	35	6.	35	6.	44	7.	45	8.	45	8.	45	8.	35	6.	0.	-20.
Garfield/McCone Co.'s	43	7.	42	7.	40	7.	40	7.	40	7.	28	5.	28	5.	-35.	-30.
Phillips County	30	5.	30	5.	30	5.	30	5.	30	5.	30	5.	30	5.	0.	0.
Powder River County	0	0.	0	0.	0	0.	0	0.	0	0.	0	0.	0	0.	0.	0.
Richland County	54	9.	54	9.	55	9.	55	10.	55	9.	55	10.	55	10.	2.	0.
Roosevelt County	92	15.	93	16.	96	16.	91	16.	91	15.	89	16.	89	16.	-3.	-7.
Rosebud/Treasure Co.'s	20	3.	20	3.	20	3.	20	3	20	3.	26	5.	26	5.	30.	30.
Sheridan County	32	5.	32	5.	32	5.	32	6.	32	5.	26	5.	26	5.	-19.	-19.
Valley County	86	14.	63	11.	63	11.	54	9.	68	11.	68	12.	68	12.	-21.	8.
TOTAL	611	100.	583	100	592	100	576	100.	595	100.	567	100.	551	100.	-10.	-7

TRENDS IN NUMBER OF HOSPITAL ADMISSIONS BY SERVICE AREA
EASTERN MONTANA
1965 & 1969 THROUGH 1974

SERVICE AREA	1965 No.	1969 No.	1970 No.	1971 No.	1972 No.	1973 No.	1974 No.	Percent Increase/Decr 1974 over 1965	1974 over 1970
Custer/Prairie Co.'s	4,379	4,730	6,554	4,178	3,862	3,642	3,811	-13.	-42
Daniels County	483	453	401	387	331	364	N/A	N/A	N/A
Dawson/Wibaux Co.'s	1,688	1,361	1,511	1,538	1,789	1,533	1,568	-7.	4
Fallon/Carter Co.'s	1,116	1,117	1,126	785	966	1,009	968	-13.	-14
Garfield/McCone Co.'s	1,075	973	938	893	782	801	730	-32.	-22.
Phillips County	795	777	745	822	842	867	954	20.	28.
Powder River County	0	0	0	0	0	0	0	0.	0.
Richland County	2,801	2,498	2,619	2,583	2,288	2,082	2,333	-17.	-11.
Roosevelt County	3,986	2,822	3,226	3,335	3,408	3,194	2,916	-27.	-10.
Rosebud/Treasure Co.'s	762	647	597	562	641	595	756	-1.	27.
Sheridan County	1,078	1,250	981	946	916	907	953	-12.	-3.
Valley County	1,605	1,821	2,007	2,217	2,249	2,197	2,085	30	4.
TOTAL	19,768	18,449	18,502	18,246	18,074	17,191	17,074	-14.	-8.

TRENDS IN NUMBER OF HOSPITAL PATIENT DAYS BY SERVICE AREA
EASTERN MONTANA
1965 & 1969 THROUGH 1974

SERVICE AREA	1965 No.	1969 No.	1970 No.	1971 No.	1972 No.	1973 No.	1974 No.	Percent Increase/Decrease 1974 over 1965	1974 over 1970
Custer/Prairie Co.'s	29,337	33,932	28,153	26,564	23,176	21,690	24,693	-16.	-12.
Daniels County	3,650	2,741	2,655	2,263	1,011	1,622	N/A	N/A	N/A
Dawson/Wibaux Co.'s	10,704	8,692	9,378	10,280	11,469	8,982	9,077	-15.	-3.
Fallon/Carter Co.'s	7,754	8,127	7,164	6,217	5,180	4,475	4,538	-41.	-37.
Garfield/McCone Co.'s	7,512	8,948	5,047	6,267	4,765	7,943	3,559	-53.	-29.
Phillips County	6,944	7,668	5,308	5,528	7,741	6,642	7,190	4.	35.
Powder River County	0	0	0	0	0	0	0	0.	0.
Richland County	13,196	14,842	14,089	14,636	13,606	10,643	12,923	-2.	-8.
Roosevelt County	21,191	23,115	22,647	21,953	15,661	18,013	14,874	-30.	-34.
Rosebud/Treasure Co.'s	4,528	6,054	4,086	3,347	5,608	5,189	4,542	0.	11.
Sheridan County	7,900	8,000	8,739	7,952	7,799	6,977	6,603	-16.	-24.
Valley County	11,153	11,483	12,352	15,816	15,748	13,178	11,773	6.	-5.
TOTAL	123,269	133,630	119,545	119,825	111,764	105,354	99,772	-19	-17

TRENDS IN HOSPITAL OCCUPANCY BY SERVICE AREA
EASTERN MONTANA
1965 & 1969 THROUGH 1974

SERVICE AREA	1965		1969		1970		1971		1972		1973		1974		Bed Usage Percent Increase/Dec	
	No. of Beds	% Occ.	No. of Beds	% Occ.	No. of Beds	% Occ.	No. of Beds	% Occ.	No. of Beds	% Occ.	No. of Beds	% Occ.	No. of Beds	% Occ.	1974 over 1965	1974 ov 1970
Custer/Prairie Co.'s	147	54.6	148	62.8	146	52.8	143	50.9	148	42.2	134	43.7	128	52.1	-16.9	-13.5
Daniels County	26	38.5	20	38.0	20	36.4	20	31.0	20	13.8	20	22 2	20	N/A	N/A	N/A
Dawson/Wibaux Co.'s	46	64.0	46	63.0	46	56.5	46	56.5	46	68.3	46	54.0	46	54.1	-15.5	-4.2
Fallon/Carter Co.'s	35	60 7	35	63.6	44	44.6	45	37.9	45	31.5	45	27.2	35	35.5	-41.5	-36.7
Garfield/McCone Co.'s	43	47.9	42	58.4	40	34.6	40	42.9	40	32.6	28	77.7	28	34.8	-52.7	-29.6
Phillips County	30	63.4	30	70.0	30	48.0	30	50.5	30	70.7	30	60.7	30	65.7	3.6	36.9
Powder River County	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0
Richland County	54	67.0	54	75.0	55	70.0	55	72.9	55	67.8	55	53.0	55	64.4	-2.1	-8.0
Roosevelt County	92	63.1	93	68.1	94	66.0	91	66.1	91	47.2	89	55.5	89	45.8	-29.8	-34.3
Rosebud/Treasure Co.'s	20	62.0	20	83.0	20	55.2	20	45.8	20	76.8	26	53.9	26	47.9	.4	12.8
Sheridan County	32	67.6	32	69.0	32	75.0	32	68.0	32	66.8	26	73.5	26	69.6	-16.3	-24.6
Valley County	86	35.5	63	50.0	63	54.0	54	80.0	68	63.4	68	53.1	68	47.4	5.6	-5.3
TOTAL	611	55.5	533	62.8	590	55.6	576	57.0	595	50.7	567	50.2	551	48.9	-20.5	-15 5

TRENDS IN HOSPITAL AVERAGE LENGTH OF STAY (DAYS) BY SERVICE AREA
EASTERN MONTANA
1965 & 1969 THROUGH 1974

SERVICE AREA	1965 Avg. Len. of Stay	1969 Avg. Len. of Stay	1970 Avg. Len. of Stay	1971 Avg. Len. of Stay	1972 Avg. Len. of Stay	1973 Avg. Len. of Stay	1974 Avg. Len. of Stay	Percent Increase/ 1974 over 1965	197- 1-
Custer/Prairie Co.'s	6.7	7.2	4 3	6.4	6.0	6.0	6.5	-3.	5
Daniels County	7.6	6.0	6.6	5.9	3.1	4.5	N/A	N/A	N.
Dawson/Wibaux Co.'s	6.3	6.4	6.2	6.7	6.4	5.9	5.8	-7.9	-8
Fallon/Carter Co.'s	7.0	7.3	6.4	7.9	5.4	4.4	4.7	-32.9	-2
Garfield/McCone Co.'s	7.0	9.2	5.4	7.0	6.1	9.9	4.9	-30.0	-9
Phillips County	8.7	9.9	7.1	6.7	9.2	7.7	7.5	-13.8	5
Powder River County	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Richland County	4.7	5.9	5.6	5.7	5.9	5.1	5.5	17.0	-
Roosevelt County	5.3	8.2	7.0	6.6	4.6	5.6	5.1	-3.8	-2
Rosebud/Treasure Co.'s	5.9	9.4	6.8	6.0	8.7	8.7	6.0	1.7	-1
Sheridan County	7.3	6.4	8.9	8.4	8.5	7.7	6.9	-5.5	-2
Valley County	7.0	6.3	6.2	7.1	7.0	6.0	5.6	-20.0	-
TOTAL	6.3	7.2	6 5	6 6	6.2	6.1	5.8	-7.9	-

TRENDS IN NUMBER OF HOSPITAL BEDS BY SERVICE AREA
BY CATEGORIES OF INPATIENT CARE *
EASTERN MONTANA - 1972 THROUGH 1974

SERVICE AREA	TOTAL			MEDICAL			SURGICAL			MATERNITY			PEDIATRICS		
	1972	1973	1974	1972	1973	1974	1972	1973	1974	1972	1973	1974	1972	1973	1974
Custer/Prairie Co.'s	148	134	128	53	7	41	66	0	45	12	17	19	14	10	11
Daniels County	20	20	0	0	20	0	0	0	0	0	0	0	0	0	0
Dawson/Wibaux Co.'s	46	46	46	0	40	40	40	0	0	6	6	6	0	0	0
Fallon/Carter Co.'s	45	45	35	0	20	36	0	0	0	0	1	4	0	7	5
Garfield/McCone Co.'s	40	28	28	14	20	20	2	2	2	2	2	2	2	4	4
Phillips County	30	30	30	18	19	19	2	2	2	4	4	4	2	2	2
Powder River County	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Richland County	55	55	55	21	21	21	20	20	20	6	6	6	4	4	4
Roosevelt County	91	89	89	27	27	15	15	15	13	14	13	13	12	12	12
Rosebud/Treasure Co.'s	20	20	26	12	N/A	N/A	4	N/A	N/A	2	N/A	N/A	2	N/A	N/A
Sheridan County	32	26	26	17	15	15	10	8	8	2	2	2	3	1	1
Valley County	68	68	68	41	41	35	0	0	0	11	11	11	2	2	2
TOTAL	595	567	551	203	232	242	159	47	90	59	62	67	41	42	41

* The categories--Medical, Surgical, Maternity, Pediatrics--are not exhaustive; the total figure, therefore, may exceed the sum of the figures in the four categories.

TRENDS IN NUMBER OF HOSPITAL ADMISSIONS BY SERVICE AREA
BY CATEGORIES OF INPATIENT CARE
EASTERN MONTANA - 1972 THROUGH 1974

SERVICE AREA	MEDICAL			SURGICAL			MATERNITY			PEDIATRICS		
	1972	1973	1974	1972	1973	1974	1972	1973	1974	1972	1973	1974
Custer/Prairie Co.'s	1425	1509	1531	357	410	337	723	762	818	363	299	315
Daniels County	331	364	357	N/A	→				37	N/A	→	
Dawson/Wibaux Co.'s	N/A	→					200	193	459	N/A	→	
Fallon/Carter Co.'s	N/A	→										
Garfield/McCone Co.'s	N/A	→	51	N/A	→		26	16	21	N/A	→	
Phillips County	N/A	→					62	50	58	N/A	→	
Powder River County	0	→										
Richland County	N/A	→					187	173	167	N/A	→	
Roosevelt County	3433	2999	2704	N/A	→		251	225	215	378	298	304
Rosebud/Treasure Co.'s	N/A	→						15	15	N/A	→	127
Sheridan County	999	917	N/A	→				73	78	N/A	→	
Valley County	N/A	→							287	N/A	→	

Source: John Short & Associates, Inc., Acute Care Facilities Survey, January, 1975.

TRENDS IN NUMBER OF HOSPITAL PATIENT DAYS BY SERVICE AREA
BY CATEGORIES OF INPATIENT CARE*
EASTERN MONTANA - 1972 THROUGH 1974

SERVICE AREA	TOTAL			MEDICAL			SURGICAL			MATERNITY			PEDIATRICS		
	1972	1973	1974	1972	1973	1974	1972	1973	1974	1972	1973	1974	1972	1973	1974
Custer/Prairie Co.'s	23176	21690	24693	10664	12169	9479	9493	7057	9073	1403	1473	1951	1362	991	966
Daniels County	1011	1622	N/A	442	1622	N/A	378	0	N/A	140	0	N/A	51	0	N/A
Dawson/Wibaux Co.'s	11469	8982	9077	8024	6060	8272	2026	1799	0	777	695	805	642	428	0
Fallon/Carter Co.'s	5180	4475	4538	0	4128	4261	0	0	0	0	135	173	1	212	104
Garfield/McCone Co.'s	4765	7943	3559	768	3474	2544	0	579	389	0	81	100	1	472	526
Phillips County	7741	6642	7190	5273	4777	5363	173	181	247	227	235	227	194	354	258
Powder River County	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Richland County	13606	10643	12923	9133	6892	7713	3166	2209	3183	607	554	651	539	663	934
Roosevelt County	15661	18013	14874	9547	12418	9188	3452	3276	2667	765	743	863	1897	1576	2156
Rosebud/Treasure Co.'s	5608	5189	4542	2523	2682	2435	230	238	321	37	54	59	227	180	355
Sheridan County	7799	6977	6603	5763	4718	4660	1528	1782	1425	248	290	335	260	187	183
Valley County	15748	13178	11773	10884	8900	8167	2904	1460	0	881	907	980	1079	1911	113
TOTAL	111,764	105,354	99,772	63,021	67,840	62,082	23,350	18,581	17,305	5085	5167	6144	6253	6974	6613

* The categories--Medical, Surgical, Maternity, Pediatrics--are not exhaustive, the total figure, therefore, may exceed the sum of the figures in the four categories.

TRENDS IN NUMBER OF HOSPITAL SURGICAL PROCEDURES BY SERVICE AREA

EASTERN MONTANA - 1972 THROUGH 1974

SERVICE AREA	TOTAL			MAJOR			MINOR		
	1972	1973	1974	1972	1973	1974	1972	1973	1974
Custer/Prairie Co.'s	1664	1515	1509	557	569	571	1107	946	938
Daniels County	71	55	N/A	25	34	N/A	46	21	N/A
Dawson/Wibaux Co.'s	490	405	418	236	193	207	254	212	211
Fallon/Carter Co.'s	129	112	3*	10	47	0*	119	65	3*
Garfield/McCone Co.'s	226	178	172	65	39	48	161	139	124
Phillips County	68	61	96	7	16	12	61	45	84
Powder River County	0	0	0	0	0	0	0	0	0
Richland County	866	857	1044	304	256	290	562	601	754
Roosevelt County	650	525	360	361	303	238	289	222	122
Rosebud/Treasure Co.'s	59	154	175	5	17	5	54	137	170
Sheridan County	251	288	238	141	166	136	110	122	102
Valley County	755	731	739	261	248	257	494	483	482
TOTAL	5229	4881	4954	1972	1888	1764	3257	2993	2990

* Dahl Memorial Hospital not reporting.

TRENDS IN NUMBER OF HOSPITAL OUTPATIENT VISITS BY SERVICE AREA*

EASTERN MONTANA - 1972 THROUGH 1974

SERVICE AREA	TOTAL VISITS			CLINIC			EMERGENCY		
	1972	1973	1974	1972	1973	1974	1972	1973	1974
Custer/Prairie Co.'s	8540	9107	10,712	3204	478	1066	3492	3278	3647
Daniels County	933	995	175	888	920	N/A	45	75	175
Dawson/Wibaux Co.'s	2932	1988	2398	1749	1551	1114	1183	437	1284
Fallon/Carter Co.'s	3482	1538	3417	2362	549**	2434	1139	989	983
Garfield/McCone Co.'s	1047	985	930	278	300	250	769	685	680
Phillips County	825	1082	1348	600	854	974	225	228	374
Powder River County	0	0	0	0	0	0	0	0	0
Richland County	2468	2375	4244	33	1622	3252	635	753	992
Roosevelt County	6764	7421	7785	5856	5455	4541	908	1966	3244
Rosebud/Treasure Co.'s	1211	1336	1524	N/A	N/A	N/A	N/A	N/A	N/A
Sheridan County	362	393	492	N/A	N/A	N/A	362	393	492
Valley County	2859	3424	3058	2674	3217	2866	185	207	192
TOTAL	31,423	31,650	36,083	17,644	14,946	16,497	8,943	9,011	12,063

* The service areas are not exhaustive, the total figures, therefore, may exceed the sum of the figures in the two areas.

** Dahl Memorial Hospital not reporting.

APPENDIX E

SAMPLE OUTPUT

OF HPROF-1

CODE / FACILITY NAME	OCCUPANCY RATE	AVERAGE LENGTH OF STAY	PER DIEM COST	PHYSICIANS ACTV	PHYSICIANS CNST	PHYSICIANS OTHR	NURSES RN	NURSES LPN	NURSES TOTAL
[illegible]									
[illegible]	33.6%	5.1 DAYS	$126.33	5	4	0	14	3	17
[illegible]									
[illegible]	43.5%	4.7 DAYS	$ 73.32	1	1	0	7	1	8
[illegible]									
[illegible]	30.5%	3.8 DAYS	$106.61	3	3	3	11	0	11
[illegible]									
[illegible]	51.6%	4.6 DAYS	$164.50	7	0	0	3	0	3
[illegible]									
[illegible]	.0%	.0 DAYS	$ .00	0	0	0	0	0	0
[illegible]									
[illegible]	61.5%	4.4 DAYS	$144.84	73	37	15	73	53	126
[illegible]	58.9%	5.0 DAYS	$130.90	82	48	14	130	77	215
[illegible]	.6%	.0 DAYS	$117.04	30	75	0	20	11	31
[illegible]	11.0%	2.1 DAYS	$270.00	5	4	0	11	2	13
[illegible]									
[illegible]	58.6%	5.1 DAYS	$ 82.77	2	3	13	9	4	13
[illegible]									
[illegible]	47.6%	5.3 DAYS	$109.93	11	9	4	32	10	42
[illegible]									
[illegible]									
[illegible]									
[illegible]	65.7%	7.5 DAYS	$ 40.91	3	2	0	9	6	15
[illegible]									
[illegible]	45.5%	4.5 DAYS	$112.28	4	13	2	20	6	26
[illegible]									
[illegible]									
[illegible]									
[illegible]	53.9%	5.1 DAYS	$ 63.18	7	5	1	15	2	17

	BEDS		ADMISSIONS		PATIENT DAYS		OCCUPANCY RATE	AVERAGE LENGTH OF STAY	PER DIEM COST	PHYSICIANS ACTV	PHYSICIANS CNST	PHYSICIANS OTHR	NURSES RN	NURSES LPN	NURSES TOTAL
[illegible]	[illegible]		[illegible]		[illegible]										
[illegible]	23.	1.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.0 DAYS	$ .00	2	37	0	4	12	16
[illegible]	0.	0.	[illegible]	[illegible]	0.	0.%	.0%	.0 DAYS	$ .00	0	0	0	0	0	0
[illegible]	[illegible]	3.	3742.	3.%	16819.	2.%	48.9%	4.5 DAYS	$ 87.36	15	25	10	35	13	48
[illegible]	1[illegible]	[illegible]	[illegible]	6.6	[illegible]	5.%	[illegible]	5.5 DAYS	$124.07	88	6	18	104	27	131
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6.0 DAYS	$ 84.79	2	2	0	7	6	13
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.1 DAYS	$126.33	5	4	0	14	3	17
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.7 DAYS	$ 73.32	1	1	0	7	1	8
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.8 DAYS	$106.61	3	5	3	11	0	11
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.6 DAYS	$164.50	7	0	0	3	0	3
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.0 DAYS	$ .00	0	0	0	0	0	0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.6 DAYS	$137.60	190	164	29	242	143	385
[illegible]	17.	[illegible]	711.	1.%	3037.	0.%	52.6%	5.1 DAYS	$ 82.77	2	3	13	9	4	13
[illegible]	54.	1.%	[illegible]	1.%	[illegible]	1.%	[illegible]	5.3 DAYS	$109.93	11	9	4	32	10	42
[illegible]	0.	0.%	0.	0.%	0.	0.%	.0%	.0 DAYS	$ .00	0	0	0	0	0	0
[illegible]	30.	1.%	954.	1.%	7190.	1.%	65.7%	7.5 DAYS	$ 40.91	3	2	0	9	6	15
[illegible]	30.	1.%	[illegible]	1.%	[illegible]	1.%	[illegible]	4.5 DAYS	$112.28	4	13	2	20	6	26
[illegible]	0.	0.%	0.	0.%	0.	0.%	.0%	.0 DAYS	$ .00	0	0	0	0	0	0
[illegible]	35.	1.%	1349.	1.%	[illegible]	1.%	[illegible]	5.1 DAYS	$ 83.18	7	5	1	15	2	17
[illegible]	8.	0.%	[illegible]	0.%	[illegible]	0.%	[illegible]	5.4 DAYS	$163.64	1	4	0	8	4	12
[illegible]	32.	1.%	[illegible]	2.%	[illegible]	1.%	[illegible]	4.2 DAYS	$ 83.21	9	4	6	23	10	33
[illegible]	58.	1.%	[illegible]	2.%	[illegible]	2.%	[illegible]	5.5 DAYS	$ 94.39	5	2	3	20	11	31

MONTANA STATE PROFILES
PROFILE BY FACILITY

COUNTY / FACILITY		****BEDS**** NO.	%	**PATIENT DAYS* NO.	%	*OCCUPANCY* RATE	*ADMISSIONS* NO.	INDEX	*PER DIEM* COST
LEWIS & CLARK									
HELENA NURSING HOME & HEALTH FACILITIES INC									$ .00
	SKILLED	26	46.%	8822	89.%	93.%	86	1.41	
	INT-A	31	54.%	1146	11.%	10.%	21	.00	
	INT-B	0	0.%	0	0.%	0.%	0	.00	
	TOTAL	57	100.%	9968	100.%	48.%	107	1.75	
COONEY CONVALESCENT HOME									$ 19.31
	SKILLED	39	62.%	5481	26.%	39.%	25	1.09	
	INT-A	24	38.%	12014	56.%	137.%	41	.93	
	INT-B	0	0.%	3994	19.%	0.%	8	1.14	
	TOTAL	63	100.%	21489	100.%	93.%	74	1.00	
PARKSIDE MANOR INC DBA ALHAMBRA MANOR INC									$ 11.42
	SKILLED	0	0.%	0	0.%	0.%	0	.00	
	INT-A	36	69.%	9252	51.%	70.%	33	.94	
	INT-B	16	31.%	9055	49.%	155.%	11	.92	
	TOTAL	52	100.%	18307	100.%	96.%	44	.94	
WESTERN CARE NURSING HOME									$ 16.40
	SKILLED	54	50.%	16973	50.%	86.%	41	1.37	
	INT-A	54	50.%	16973	50.%	86.%	37	.97	
	INT-B	0	0.%	0	0.%	0.%	0	.00	
	TOTAL	108	100.%	33946	100.%	86.%	78	1.15	
ALL SEASONS INC									$ .00
	SKILLED	0	0.%	0	0.%	0.%	0	.00	
	INT-A	67	100.%	22150	89.%	91.%	0	.00	
	INT-B	0	0.%	2730	11.%	0.%	0	.00	
	TOTAL	67	100.%	24880	100.%	102.%	0	.00	
LIBERTY									
LIBERTY COUNTY NURSING HOME									$ 15.77
	SKILLED	28	62.%	6915	61.%	102.%	21	1.24	
	INT-A	11	38.%	2743	19.%	68.%	9	.82	
	INT-B	4	10.%	2928	20.%	201.%	4	.57	
	TOTAL	39	100.%	14586	100.%	102.%	34	.97	

APPENDIX F

SAMPLE OUTPUT

OF HPROF-2

SELECTED HOSPITALS FOR 1974
PROFILE BY INSTITUTION: FIRST ATTACHMENT

FACILITY NAME	OCCUPANCY RATE	AVERAGE LENGTH OF STAY	PER DIEM COST	PHYSICIANS ACTV	PHYSICIANS CNST	PHYSICIANS OTHR	NURSES RN	NURSES LPN	NURSES TOTAL
SALEM STATE HOSPITAL	53.7%	106.6 DAYS	$ 56.02	5	8	0	20	28	48
BOULDER RIVER SCHOOL & HOSPITAL	.0%	.0 DAYS	$135.23	2	37	0	4	12	16
*TOTAL:	47.0%	45.5 DAYS	$ 56.02	7	45	0	24	40	64

[illegible] FOR 1974
[illegible]

	MEDICAL BEDS	P-DAYS	**SURGICAL* BEDS	P-DAYS	*MATERNITY* BEDS	P-DAYS	*PEDIATRIC* BEDS	P-DAYS	****SURGERIES**** MAJOR	MINOR	TOTAL	*****OUTPATIENT***** VISITS	CLINIC	EMRGCY
[illegible]	0	0	0	0	0	0	0	0	33	71	104	308	308	0
[illegible]	0	0	0	0	0	0	0	0	26	25	51	0	3000	80
TOTAL	0	0	0	0	0	0	0	0	59	96	155	308	4108	80

SELECTED HOSPITALS FOR 1974
SECOND ATTACHMENT

	BEDS NO.	%	ADMISSIONS NO.	%	PATIENT DAYS NO.	%	OCCUPANCY RATE	AVERAGE LENGTH OF STAY	PER DIEM COST	PHYSICIANS ACTV	CNST	OTHR	N U R S E S RN	LPN	TOTAL
[illegible]	161.	87.%	296.	43.%	31556.	100.%	53.7%	106.6 DAYS	$ 56.02	5	8	0	20	28	48
Bassett	23.	13.%	398.	57.%	0.	0.%	.0%	.0 DAYS	$ .00	2	37	0	4	12	16
*TOTAL:	184.	100.%	694.	100.%	31556.	100.%	47.0%	45.5 DAYS	$ 56.02	7	45	0	24	40	64

APPENDIX G

SAMPLE OUTPUT

OF LPROF-1

MONTANA STATE PROFILES
PROFILE BY COUNTY

COUNTY		BEDS		PATIENT DAYS		OCCUPANCY RATE	ADMISSIONS NO.	ADMISSIONS INDEX	FED DIEM COST
CASCADE									$ 15.67
	SKILLED	335	91.%	142128	85.%	116.%	467	.78	
	INT-A	10	3.%	9766	6.%	266.%	14	.57	
	INT-B	25	7.%	14309	9.%	157.%	10	1.25	
	TOTAL	370	100.%	166263	100.%	123.%	491	.75	
CHOUTEAU									$ 6.52
	SKILLED	63	100.%	5451	28.%	24.%	12	.67	
	INT-A	0	0.%	6771	34.%	0.%	33	1.65	
	INT-B	0	0.%	7445	38.%	0.%	27	.84	
	TOTAL	63	100.%	19667	100.%	86.%	74	.87	
CUSTER									$ 13.59
	SKILLED	60	37.%	11411	26.%	52.%	56	.74	
	INT-A	94	58.%	31882	72.%	93.%	107	1.59	
	INT-B	3	2.%	881	2.%	81.%	1	.50	
	TOTAL	161	100.%	44174	100.%	75.%	164	1.12	
DANIELS									$ 13.94
	SKILLED	19	100.%	5070	49.%	73.%	0	.00	
	INT-A	0	0.%	5246	51.%	0.%	0	.00	
	INT-B	0	0.%	0	0.%	0.%	0	.00	
	TOTAL	19	100.%	10316	100.%	149.%	0	.00	
DAWSON									$ 13.62
	SKILLED	25	51.%	9035	51.%	99.%	8	.89	
	INT-A	0	0.%	8660	49.%	0.%	10	1.11	
	INT-B	24	49.%	0	0.%	0.%	0	.00	
	TOTAL	49	100.%	17695	100.%	99.%	18	1.00	
DEER LODGE									$ 2.16
	SKILLED	203	16.%	97123	25.%	131.%	711	1.04	
	INT-A	320	26.%	96194	25.%	82.%	628	1.05	
	INT-B	727	58.%	189711	50.%	71.%	0	.00	
	TOTAL	1250	100.%	383028	100.%	84.%	1339	1.03	

$$\text{INDEX} = \frac{\text{No. admissions annually}}{\text{No. transfers + no. deaths annually}}$$

APPENDIX H

SAMPLE OUTPUT

OF LPROF-2

SELECTED FACILITIES FOR 1976
PROFILE BY FACILITY

FACILITY		****BEDS**** **NO.	%**	**PATIENT DAYS* ***NO.	%**	*OCCUPANCY*& ****RATE***	*ADMISSIONS* *NO.	INDEX*	*PER DIEM* ***COST***
[illegible] CENTER FOR THE AGED									$ 6.91
	SKILLED	10	7.%	1432	3.%	39.%	4	.44	
	INT-A	45	31.%	13026	25.%	79.%	12	.52	
	INT-B	91	62.%	38141	73.%	115.%	25	3.13	
	TOTAL	146	100.%	52599	100.%	99.%	41	1.02	
[illegible] SCHOOL & HOSPITAL									$ 27.96
	SKILLED	0	0.%	841	0.%	0.%	388	1.01	
	INT-A	303	100.%	156124	92.%	142.%	102	.37	
	INT-B	0	0.%	12867	7.%	0.%	0	.00	
	TOTAL	303	100.%	171832	100.%	156.%	490	.77	
[illegible] STATE HOSPITAL									$ 13.21
	SKILLED	0	0.%	0	0.%	0.%	0	.00	
	INT-A	125	100.%	45987	100.%	101.%	39	.65	
	INT-B	0	0.%	0	0.%	0.%	0	.00	
	TOTAL	125	100.%	45987	100.%	101.%	39	.65	

	BEDS		PATIENT DAYS		OCCUPANCY	ADMISSIONS		PER DIEM
	NO.	%	NO.	%	RATE	NO.	INDEX	COST
								$ 21.36
SKILLED	11	2.1	2273	1.%	62.3	392	1.00	
INT-A	473	82.9	217137	80.3	126.3	153	.42	
INT-B	91	15.9	51013	18.%	15[illegible].%	[illegible]5	1.47	
TOTAL	573	100.%	27[illegible]13	100.%	129.3	570	.74	

APPENDIX I

SAMPLE OUTPUT

OF MD-4-6

ACTIVE MONTANA PHYSICIANS' AGE BY COUNTY

COUNTY PHYSICIANS: NUMBER/PERCENTAGE OF TOTAL OF COUNTY

	TOTAL	OVER 65	61 TO 65	55 TO 60	30 TO 54	UNDER 30	NOT GIVEN
[illegible]	5; .2%	0; .0%	1; 20.0%	2; 40.0%	1; 20.0%	1; 20.0%	0; .0%
BIG HORN	3; .1%	0; .0%	0; .0%	0; .0%	3;100.0%	0; .0%	0; .0%
BLAINE	2; .1%	1; 50.0%	1; 50.0%	0; .0%	1; 50.0%	0; .0%	0; .0%
BROADWATER	2; .1%	1; 50.0%	0; .0%	0; .0%	1; 50.0%	0; .0%	0; .0%
CARBON	2; .1%	0; .0%	0; .0%	0; .0%	2;100.0%	0; .0%	0; .0%
CARTER	1; .1%	0; .0%	0; .0%	1;100.0%	0; .0%	0; .0%	0; .0%
CASCADE	111; 5.2%	8; 7.2%	22; 19.8%	12; 10.8%	58; 52.3%	0; .0%	11; 9.9%
CHOUTEAU	3; .1%	0; .0%	1; 33.3%	0; .0%	1; 33.3%	1; 33.3%	0; .0%
CUSTER	17; .8%	3; 17.6%	3; 17.6%	1; 5.9%	10; 58.8%	0; .0%	0; .0%
DANIELS	2; .1%	0; .0%	0; .0%	1; 50.0%	1; 50.0%	0; .0%	0; .0%
DAWSON	8; .4%	0; .0%	0; .0%	1; 12.5%	5; 62.5%	0; .0%	0; .0%
DEER LODGE	22; 1.0%	0; .0%	3; 13.6%	4; 18.2%	13; 59.1%	2; 9.1%	0; .0%
FALLON	2; .1%	1; 50.0%	1; 50.0%	0; .0%	0; .0%	0; .0%	0; .0%
FERGUS	9; .4%	3; 33.3%	0; .0%	1; 11.1%	5; 55.6%	0; .0%	0; .0%
FLATHEAD	87; 4.1%	4; 7.0%	7; 12.3%	6; 10.5%	37; 64.9%	1; 1.8%	2; 3.5%
GALLATIN	54; 2.5%	4; 7.4%	10; 18.5%	5; 9.3%	34; 63.0%	0; .0%	1; 1.9%
GARFIELD	2; .1%	1; 50.0%	1; 50.0%	0; .0%	0; .0%	0; .0%	0; .0%
GLACIER	5; .2%	1; 20.0%	1; 20.0%	0; .0%	2; 40.0%	1; 20.0%	0; .0%
GOLDEN VALLEY	0; .0%	0; .0%	0; .0%	0; .0%	0; .0%	0; .0%	0; .0%

COUNTY PHYSICIANS: NUMBER/PERCENTAGE OF TOTAL OR COUNTY

	TOTAL	OVER 65	61 TO 65	55 TO 60	30 TO 54	UNDER 30	NOT GIVEN
GRANITE	1; .1%	0; .0%	0; .0%	1;100.0%	0; .0%	0; .0%	0; .0%
HILL	15; 1.7%	1; 6.7%	3; 20.0%	2; 13.3%	6; 40.0%	1; 6.7%	2; 13.3%
JEFFERSON	3; .3%	0; .0%	0; .0%	1; 33.3%	2; 66.7%	0; .0%	0; .0%
JUDITH BASIN	0; .0%	0; .0%	0; .0%	0; .0%	0; .0%	0; .0%	0; .0%
LAKE	12; 1.3%	0; .0%	3; 25.0%	3; 25.0%	6; 50.0%	0; .0%	0; .0%
LEWIS & CLARK	67; 7.4%	2; 3.0%	13; 19.4%	7; 10.4%	41; 61.2%	0; .0%	4; 6.0%
LIBERTY	3; .3%	0; .0%	1; 33.3%	0; .0%	2; 66.7%	0; .0%	0; .0%
LINCOLN	7; .8%	0; .0%	0; .0%	2; 28.6%	5; 71.4%	0; .0%	0; .0%
MC CONE	1; .1%	0; .0%	0; .0%	0; .0%	1;100.0%	0; .0%	0; .0%
MADISON	4; .4%	0; .0%	1; 25.0%	0; .0%	2; 50.0%	0; .0%	1; 25.0%
MEAGHER	2; .2%	0; .0%	1; 50.0%	0; .0%	1; 50.0%	0; .0%	0; .0%
MINERAL	2; .2%	0; .0%	0; .0%	0; .0%	1; 50.0%	1; 50.0%	0; .0%
MISSOULA	123; 13.6%	6; 5.0%	20; 16.3%	16; 13.0%	71; 57.7%	1; .8%	7; 5.7%
MUSSELSHELL	1; .1%	0; .0%	0; .0%	0; .0%	1;100.0%	0; .0%	0; .0%
PARK	11; 1.2%	2; 18.2%	0; .0%	3; 27.3%	5; 45.5%	0; .0%	1; 9.1%
PETROLEUM	0; .0%	0; .0%	0; .0%	0; .0%	0; .0%	0; .0%	0; .0%
PHILLIPS	2; .2%	0; .0%	0; .0%	0; .0%	2;100.0%	0; .0%	0; .0%
PONDERA	3; .3%	0; .0%	0; .0%	0; .0%	2; 66.7%	0; .0%	1; 33.3%
POWDER RIVER	1; .1%	0; .0%	0; .0%	0; .0%	0; .0%	0; .0%	1;100.0%

COUNTY	PHYSICIANS: NUMBER/PERCENTAGE OF TOTAL IN COUNTY											
	TOTAL		OVER 65		55 TO 65		50 TO 54		30 TO 54		UNDER 30		NOT GIVEN	
[illegible]	6;	.7%	0;	.0%	2;	33.3%	1;	16.7%	2;	33.3%	0;	.0%	1;	16.7%
[illegible]	1;	.1%	0;	.0%	0;	.0%	0;	.0%	1;	100.0%	0;	.0%	0;	.0%
[illegible]	12;	1.5%	1;	8.3%	2;	16.7%	0;	.0%	9;	75.0%	0;	.0%	0;	.0%
[illegible]	8;	.9%	1;	12.5%	2;	12.5%	1;	12.5%	3;	37.5%	1;	12.5%	1;	12.5%
[illegible]	9;	1.0%	1;	11.1%	0;	.0%	0;	.0%	3;	33.3%	4;	44.4%	1;	11.1%
[illegible]	4;	.4%	0;	.0%	0;	.0%	0;	.0%	2;	50.0%	1;	25.0%	1;	25.0%
[illegible]	4;	.4%	0;	.0%	2;	50.0%	0;	.0%	2;	50.0%	0;	.0%	0;	.0%
[illegible]	2;	.2%	0;	.0%	0;	.0%	0;	.0%	2;	100.0%	0;	.0%	0;	.0%
[illegible]	49;	5.4%	6;	8.2%	6;	12.2%	13;	26.5%	26;	53.1%	0;	.0%	0;	.0%
[illegible]	2;	.2%	0;	.0%	0;	.0%	0;	.0%	2;	100.0%	0;	.0%	0;	.0%
[illegible]	1;	.1%	0;	.0%	1;	100.0%	0;	.0%	0;	.0%	0;	.0%	0;	.0%
[illegible]	3;	.3%	0;	.0%	1;	33.3%	0;	.0%	1;	33.3%	0;	.0%	1;	33.3%
[illegible]	2;	.2%	0;	.0%	0;	.0%	0;	.0%	2;	100.0%	0;	.0%	0;	.0%
[illegible]	0;	.0%	0;	.0%	0;	.0%	0;	.0%	0;	.0%	0;	.0%	0;	.0%
[illegible]	6;	.9%	2;	25.0%	3;	37.5%	1;	12.5%	2;	25.0%	0;	.0%	0;	.0%
[illegible]	3;	.3%	1;	33.3%	1;	33.3%	0;	.0%	0;	.0%	1;	33.3%	0;	.0%
[illegible]	0;	.0%	0;	.0%	0;	.0%	0;	.0%	0;	.0%	0;	.0%	0;	.0%
[illegible]	150;	17.0%	17;	10.9%	20;	12.8%	21;	13.5%	90;	57.7%	0;	.0%	8;	5.1%
OUT OF STATE	67;	7.4%	3;	4.5%	18;	26.9%	5;	7.5%	40;	59.7%	0;	.0%	1;	1.5%

COUNTY	PHYSICIANS: NUMBER/PERCENTAGE OF TOTAL OR COUNTY													
	TOTAL		OVER 65		61 TO 65		55 TO 60		30 TO 54		UNDER 30		NOT GIVEN	
NOT RECORDED	3	.3%	0	.0%	0	.0%	0	.0%	3	100.0%	0	.0%	0	.0%
TOTAL	903	100%	69	7.6%	149	16.5%	111	12.3%	515	57.0%	16	1.8%	43	4.8%
TOTAL IN-STATE	836	100%	66	7.9%	131	15.7%	106	12.7%	475	56.8%	16	1.9%	42	5.0%